

WARREN BRF 013-4(32)
CONTRACTOR FABRICATED PBU UNITS

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SHEET 2:	PBU PLAN UNITS 1 & 4
SHEET 3:	PBU PLAN UNITS 3 & 4
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ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK

1	PER REVIEWER COMMENTS	05/22/14
REV	REVISION	DATE

REVISIONS

PROJECT
WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

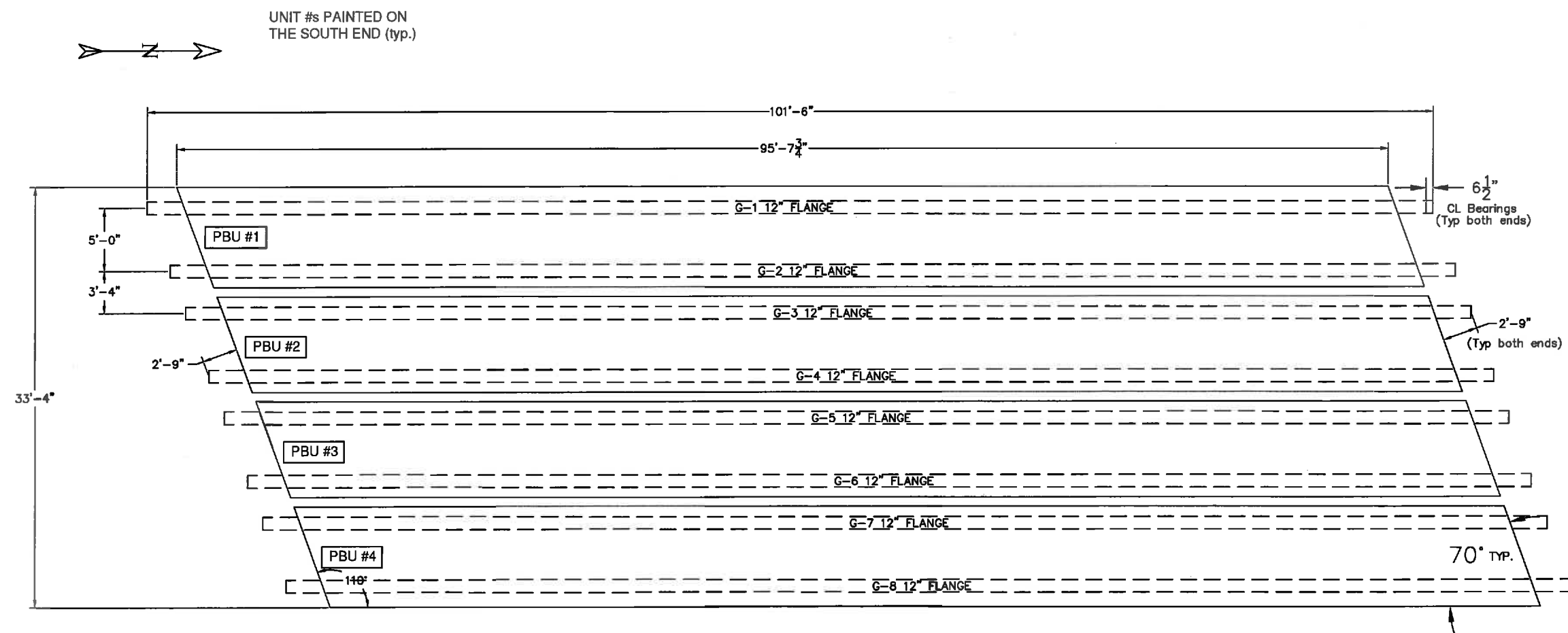
CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
COVER SHEET / INDEX

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
SHEET NO:

COVER

ROBERT M. SUTHERLAND, P
ENGINEERS—SURVEYORS—MATERIAL TESTI
PLATTSBURGH NEW YORK



1	PER REVIEWER COMMENTS	05/22/2017
REV	REVISION	DATE

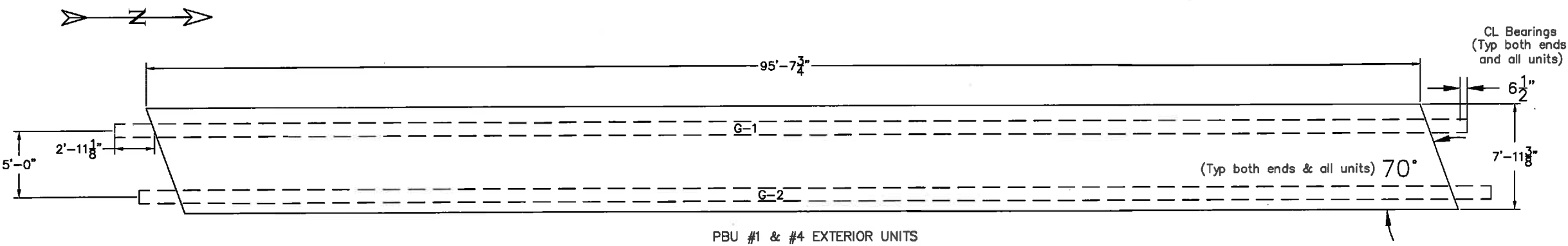
REVISIONS

PROJECT
WARREN BR
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
PLAN

DRAWN BY:	KTW
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DATE:	04/28/14
SHEET NO:	



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REVISIONS

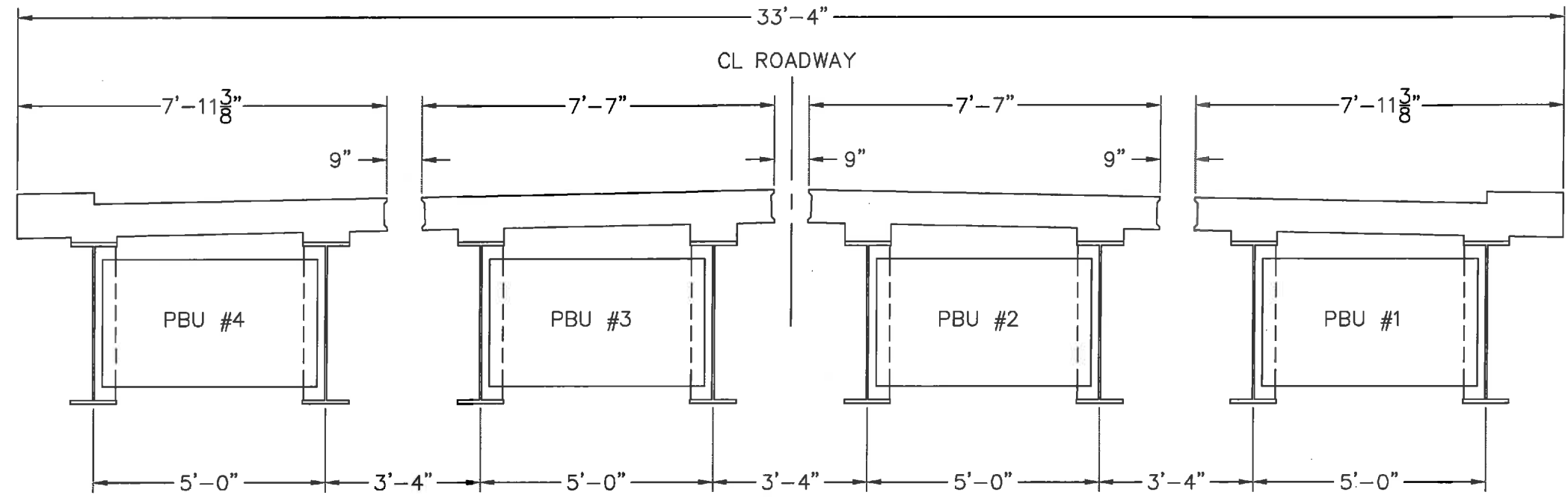
PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
PBU #1 thru #4

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ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
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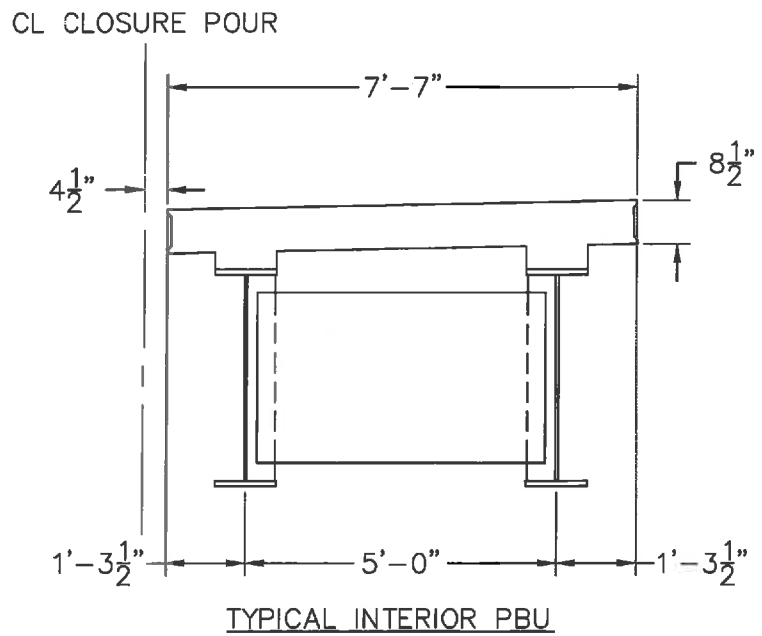
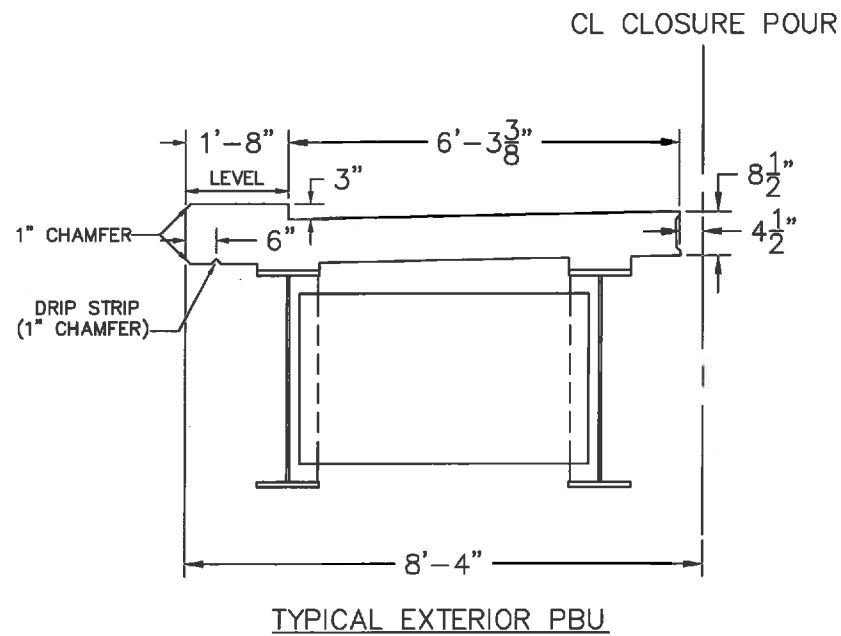
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SHEET TITLE
PRE-CAST BRIDGE UNIT
PBU DETAILS

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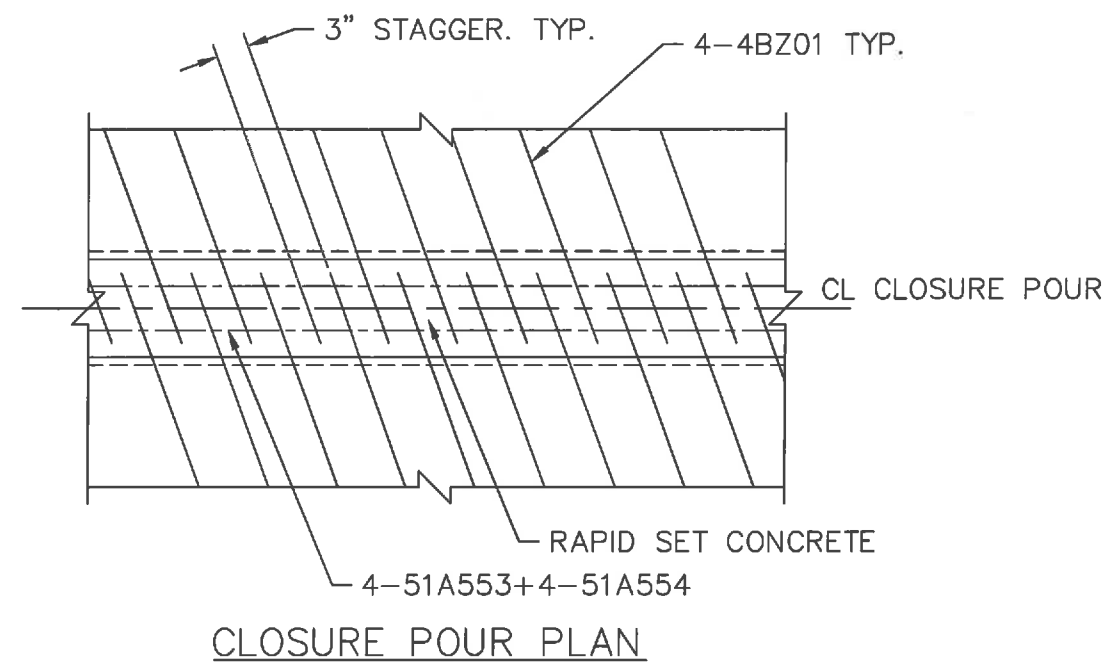
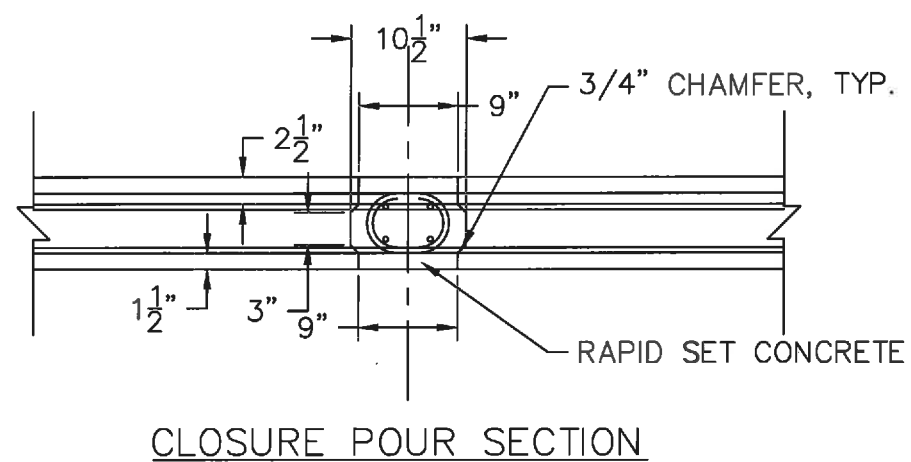
REVISIONS

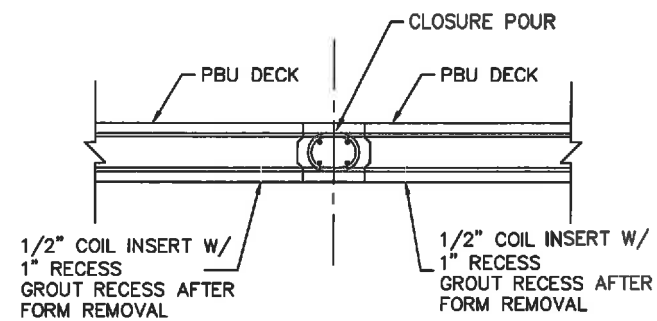
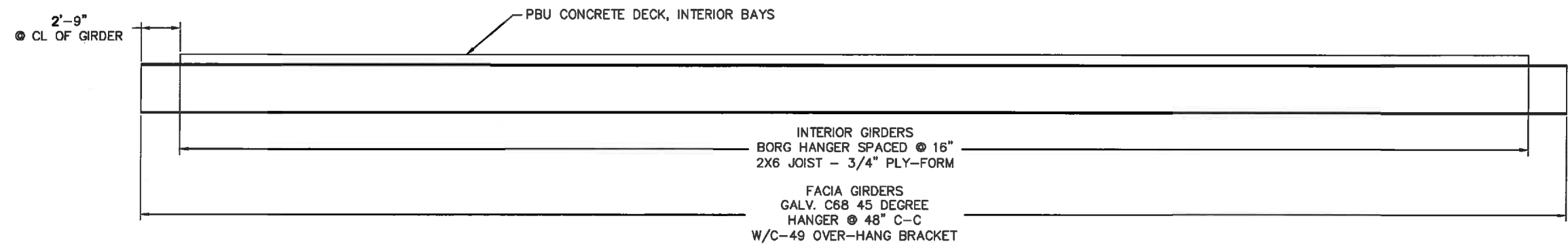
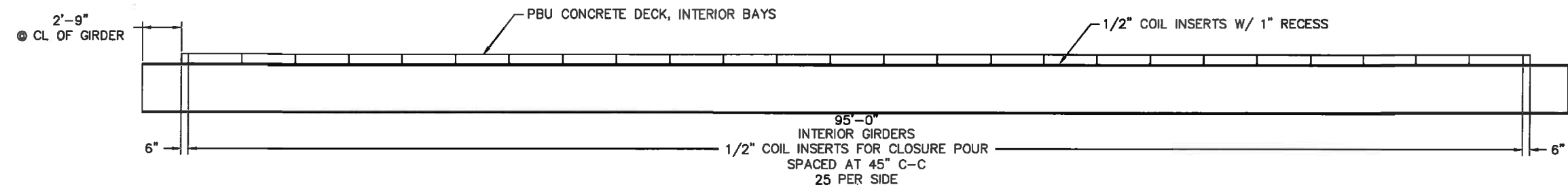
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013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
CLOSURE POUR DETAILS

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REV	REVISION	DATE
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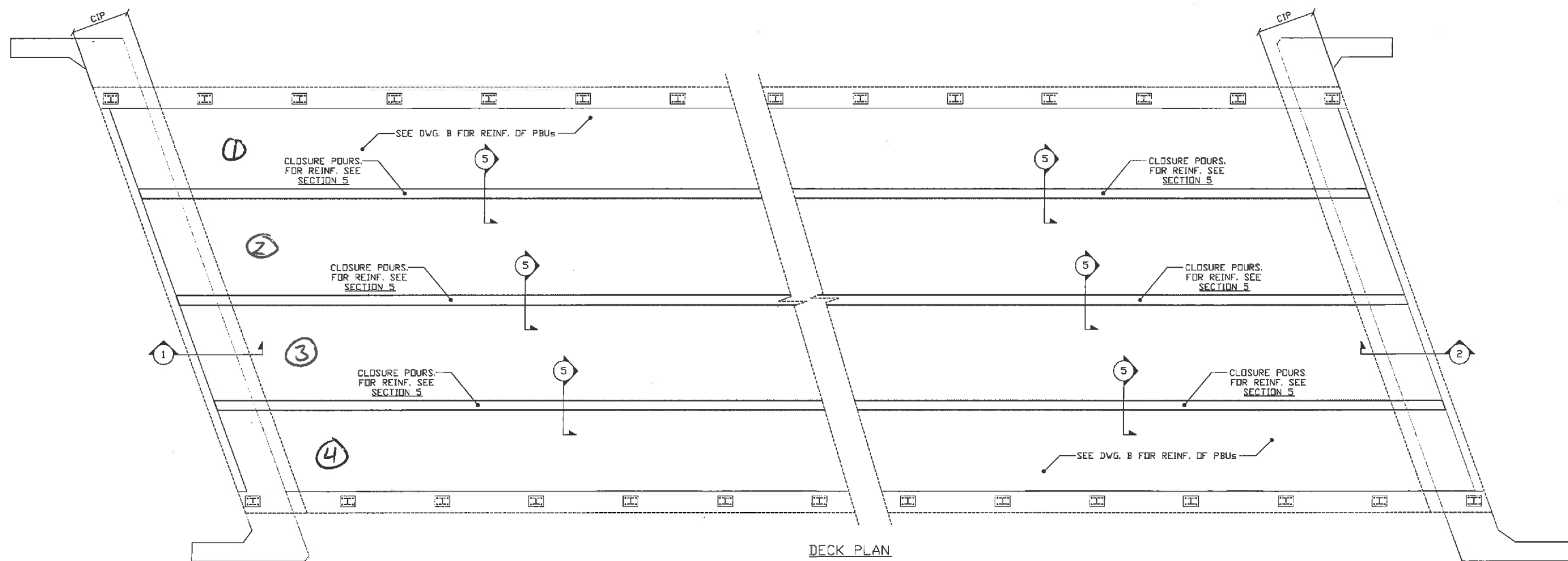
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VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PBU CLOSURE POUR
COIL INSERT LAYOUT

DRAWN BY: KTW
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SHEET NO:

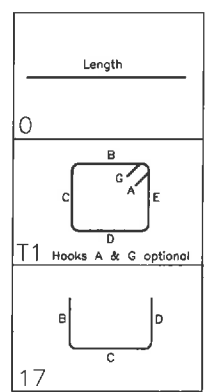


DECK PLAN

Drawing Sheet : A

Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
51A501	* 14	#5	35'-0"			35'-0"										
51A502	8	#5	35'-0"			35'-0"										
51A503	16	#5	7'-1"			7'-1"										
51A504	12	#5	3'-0"			3'-0"										
51A550	18	#5	14'-10"	T1	0'-5 1/2"	3'-4 1/2"	3'-7"	3'-4 1/2"	3'-7"		0'-5 1/2"					
51A551	18	#5	14'-6"	T1	0'-5 1/2"	3'-4 1/2"	3'-5"	3'-4 1/2"	3'-5"		0'-5 1/2"					
51A553	* 12	#5	30'-0"			30'-0"										
51A554	12	#5	19'-0"			19'-0"										
52A501	14	#5	35'-0"			35'-0"										
52A502	8	#5	35'-0"			35'-0"										
52A503	16	#5	7'-1"			7'-1"										
52A504	12	#5	3'-0"			3'-0"										
52A550	18	#5	14'-10"	T1	0'-5 1/2"	3'-4 1/2"	3'-7"	3'-4 1/2"	3'-7"		0'-5 1/2"					
52A551	18	#5	14'-6"	T1	0'-5 1/2"	3'-4 1/2"	3'-5"	3'-4 1/2"	3'-5"		0'-5 1/2"					
61A650	* 37	#6	7'-2"	17		3'-7"	3'-7"									
62A650	* 37	#6	7'-2"	17		3'-7"	3'-7"									
81A801	* 22	#8	2'-0"			2'-0"										
82A801	* 22	#8	2'-0"			2'-0"										

* BARS FOR TESTING PURPOSES INCLUDED



Vermont Agency of Transportation
RECEIVED
ON: April 11, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 04/14/2014

☒ Approved
☐ Rejected
☐ Approved As Noted

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.

McFarland Johnson
Date: 4/14/2014
By: D. Kull

**ALL DUAL COATED
REINF. DENOTED (Z)**

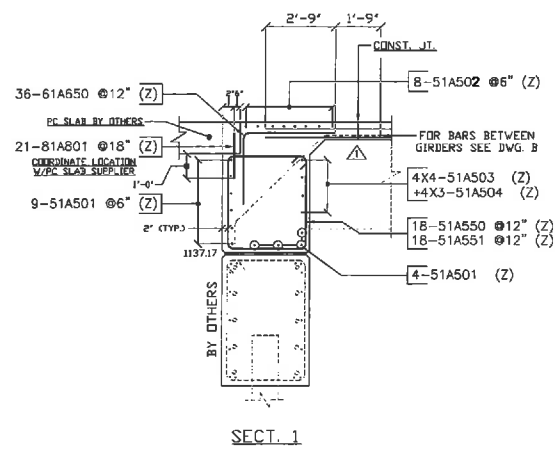
LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
DWLS.-DOWELS
VERTS.-VERTICAL
HORIZ.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
R.F.-REAR FACE
E.W.-EACH WAY
O.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

FOR APPROVAL

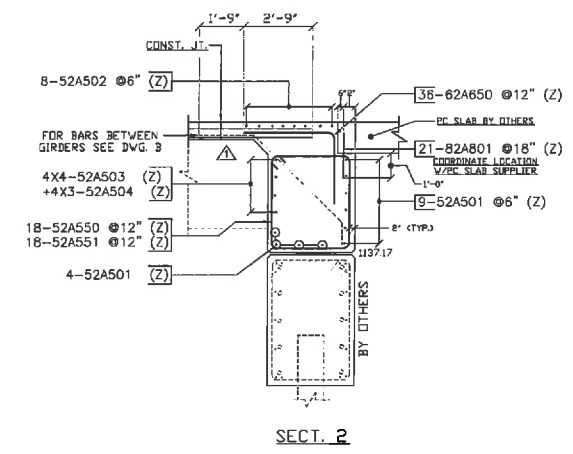
ELEVATIONS & DIMENSIONS SHOWN
ON THIS DWG. ARE FOR REINF.
DETAILING PURPOSES ONLY AND ARE
NOT INTENDED FOR CONSTRUCTION.

REINF. BARS ASTM A615 GRADE 60
DUAL COATED

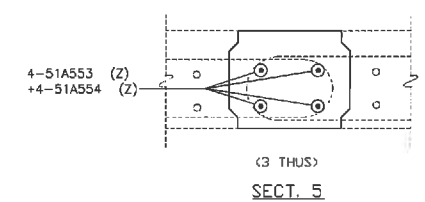
VERIFICATION OF UNCLEAR INFORMATION
MAY BE REQUESTED ON THIS DRAWING.
SHOULD VERIFICATION BE LEFT
UN-ADDRESSED IT WILL REMAIN AS
SHOWN AND ASSUME TO BE CORRECT.



SECT. 1



SECT. 2



SECT. 5

6			
5			
4			
3			
2	4-10-14	REVISED/ENG.COM/ FOR APPROVAL	
1	3-3-14	FOR APPROVAL	
DATE	REV.	SENT FOR	
DIMENSION DIMENSION FABRICATORS INC. 2000 7TH STREET SOUTH, VT 05498 Ph: (802) 375-1000 Fax: (802) 375-1000 www.dimensionfabricators.com			
STRUCTURE	VIAOT WARREN BRIDGE 013-4(32) PRECAST		
LOCATION	BRIDGE 166 ROUTE 100 (MINOR ARTERIAL) WARREN, VT		
ARCHITECT			
ENGINEER			
CUSTOMER	LUCK BROTHERS INC.		
DRAWN BY	ED	DATE	3/3/14
DATE		DATE	8747
DRAWING CODE		DRAWING #	
DUAL COATED CIP REINFORCING		A	

QUALITY CONTROL PROCEDURES-PORTABLE BRIDGE UNITS.

ALL PROCEDURES, MATERIALS AND METHODS TO BE IN COMPLIANCE WITH PAGE 26 – SPECIAL PROVISIONS – PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE.

- 1. S.D. IRELAND WILL BE SUPPLYING THE CONCRETE FROM ITS MONTPELIER PLANT AND WILL BE RESPONSIBLE FOR THE CONTRACTOR/SUPPLIER QC TESTING DURING CONCRETE PLACEMENT. S.D. IRELAND WILL SUPPLY AN ON SITE TECHNICIAN TO MONITOR AND DOCUMENT AIR CONTENT, WATER CEMENT RATIO AND SLUMP OF EACH TRUCK. S. D. IRELAND WILL ALSO PRODUCE CONCRETE TEST CYLINDERS FOR 7, 14, 28 DAY STRENGTHS. S.D. IRELAND WILL BE RESPONSIBLE FOR ANY ADJUSTMENTS TO THE CONCRETE AT THE PLANT AND OR IN THE FIELD TO MEET THE REQUIRED SPECIFICATIONS.
- 2. A PRE-PRODUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR AND RESIDENT ENGINEER BEFORE CONCRETE PLACEMENT.
- 3. VTRANS WILL RETAIN THEIR RESPONSIBILITIES FOR QUALITY ACCEPTANCE TESTING.
- 4. FOUR EXTRA CYLINDER SETS PER CONCRETE PLACEMENT SHALL BE TAKEN FOR EARLY STRENGTH BREAKS.
- 5. ALL INSIDE FORM DIMENSION AND R-BAR SPACING AND CLEARANCES SHALL BE REVIEWED AND DOCUMENTED BY THE CONTRACTOR AND RESIDENT ENGINEER BEFORE CASTING IS COMMENCED. ANY DEFICIENCIES SHALL BE CORRECTED TO MEET THE TOLERANCES BELOW.
- 6. BEFORE FORMS ARE ERECTED THE CONTRACTOR WILL PROFILE THE GIRDERS AT THE CASTING SITE THIS INFORMATION WILL BE USED TO DETERMINE BLOCKING DISTANCES AS DIRECTED BY THE ENGINEER.
- 7. FORMS SHALL HAVE A GENEROUS COATING OF FORM OIL APPLIED. CAUTION WILL BE TAKEN NOT TO HAVE PONDING OF FORM OIL IN THE BASE OF THE FORM OR ON ANY R-BAR.
- 8. ALL PRE-CAST WILL BE INSPECTED BY BOTH THE CONTRACTOR AND THE RESIDENT ENGINEER AND DOCUMENTED.
- 9. CURE WILL MEET THE REQUIREMENTS OF SECTION 501.17, AND WILL BE CONTINUOUSLY COVERED WITH WET BURLAP FOR THE SPECIFIED CURE PERIOD.

PORTABLE BRIDGE UNIT DIMENSIONAL TOLERANCES
+/- 1/4" – REINFORCING PLACEMENT, +/- 1/4" COVER AND CLEARANCE, 1" BAR SPACING.
LENGTH (EACH UNIT) +/- 3/4" (LENGTH OF ADJACENT UNITS SHOULDN'T VARY BY MORE THAN 3/4")
WIDTH +/- 3/8"
DEVIATION FROM DIAGONALS +/- 3/4" (HORIZONTAL)
DEVIATION SQUARENESS OR SKEW +/- 3/4"
HORIZONTAL ALIGNMENT +/- 3/8"

- 10. FIELD INSTALLATION TOLERANCES:
VERTICAL DEVIATION BETWEEN UNITS PRIOR TO GROUTING- +/- 1/4" (VERTICAL DEVIATIONS EXCEEDING 1/4" SHALL BE GROUND WITH DIAMOND CUP WHEELS OR OTHER MECHANICAL METHODS). THE CASTING OF ALL PBU UNITS WILL HAPPEN SIMULTANEOUSLY WITH A SINGLE SCREED MACHINE SPANNING THE ENTIRE WIDTH OF PBU 1-4. THIS SHOULD MINIMIZE ANY IRREGULARITIES IN THE JOINTS DEVIATION IN JOINT WITH- +/- 3/8".
- 11. EACH PIECE OF PRE-CAST SHALL BE MARKED WITH ITS UNIT NUMBER AND CASTING DATE AND ORIENTATION (MARKINGS PLACED ON THE SOUTH END OF THE UNIT.
- 12. CURING WILL MEET THE REQUIREMENTS OF SUBSECTION 501.17 (2) BURLAP CURE. PLACEMENT OF BURLAP WILL FOLLOW THE PROGRESS OF THE SCREED MACHINE FROM A WORK-PLATFORM WITH A LAG TIME NOT TO EXCEED 10 MINUTES. CRB WILL HAVE A POWER WASHER ON SITE FOR THE PURPOSE OF FOGGING AS NECESSARY. THE PROJECT SUPERINTENDENT WILL BE RESPONSIBLE FOR MONITORING THE CURE. ANY ADJUSTMENTS REQUIRED OR REQUESTED BY THE RESIDENT ENGINEER WILL BE MADE TO MAINTAIN THE PROPER CURING OF THE PBU UNITS. CRB WILL CHECK THE CURE DAILY INCLUDING WEEKENDS AND OTHER NON-WORKING DAYS. ALL CURING ACTIVITIES WILL BE DOCUMENTED ON THE CONTRACTORS DAILY REPORT. SILANE SEALER TO BE APPLIED TO THE UNITS AFTER CURING AND PRIOR TO SHIPPING.
- 13. CONCRETE FINISHING:
PBU FINISH WILL BE VIBRATORY SCREED FINISH. THE MORRISON SCREED WILL SPAN THE ENTIRE WIDTH OF THE PBU UNITS AND WILL RESIDE ON THE FASCIA PANELS. DRY RUNS WILL BE PERFORMED AND ADJUSTMENTS WILL BE MADE TO THE SCREED TO THE SATISFACTION OF THE ENGINEER. TOLERANCE FOR SCREED MACHINE +/- 1/4". HAND FINISHING WILL BE ALLOWED ONLY WERE IT IS NOT POSSIBLE TO USE THE SCREED MACHINE. MAGNESIUM BULL FLOATS IF NECESSARY WILL BE USED FROM A WORK BRIDGE POSITIONED BEHIND THE SCREED TO REMOVE ANY IRREGULARITIES IN THE CONCRETES SURFACE.

REPAIR OF UNITS

- 1. MINOR DEFECTS IN THE PBU UNITS AS DEFINED IN THE CONTRACT SPECIAL PROVISION PAGE 29, PARAGRAPH (m) SHALL BE FIXED USING AN OVERHEAD AND VERTICAL REPAIR MATERIAL FROM THE VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCTS LIST.
- 2. CRACKING .01" OR LESS SHALL BE SEALED WITH A PENETRATING SEALING FROM THE VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCTS LIST.
- 3. CRACK WIDTHS MEASURING .01"-.08" SHALL BE FILLED WITH AN EPOXY INJECTED CRACK FILLER FROM VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCT LIST.
- 4. PRODUCTION SITE HANDLING UNITS SHALL NOT BE LIFTED OR MOVED UNTIL DESIGN STRENGTH OF 4,000 PSI HAS BEEN MET.

PRE-ASSEMBLY:

LUCK BROTHERS, INC. WILL BE CASTING THE PBU UNITS OFF SITE. EACH UNIT WILL BE CONSTRUCTED IN A CASTING YARD APPROXIMATELY 2 MILES FROM THE SITE. PBU UNITS WILL BE CAST SIMULTANEOUSLY. THE UNIT WILL BE CAST AT THE SAME TIME WITH ONLY 9" BETWEEN BULK-HEADS. PRE-ASSEMBLY WILL NOT BE REQUIRED.

SHIPPING AND HANDLING:

PBU UNITS WILL BE CONSTRUCTED OFF SITE AND MOVED INTO PLACE ON TRAILERS AS PER ERECTION PLAN TO BE SUBMITTED UNDER SEPARATE COVER. THE PBU UNITS WILL BE INSTALLED WITH CRANES AS PER ERECTION PLAN UNDER SEPARATE COVER. DO TO TIME RESTRICTIONS DURING THE BCP ANY REPAIR WORK (IF NEEDED) WILL BE REPAIRED BEFORE THE PBU UNIT ARE IN FINAL PLACEMENT. REPAIRS PRIOR TO FINAL PLACEMENT OF PBU'S DOES NOT RELIEVE THE CONTRACTOR FROM REPAIRING DEFECTS OR DAMAGE (IF NECESSARY) TO THE PBU'S DURING PLACEMENT AND SUBSEQUENT CONSTRUCTION ACTIVITIES.

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK

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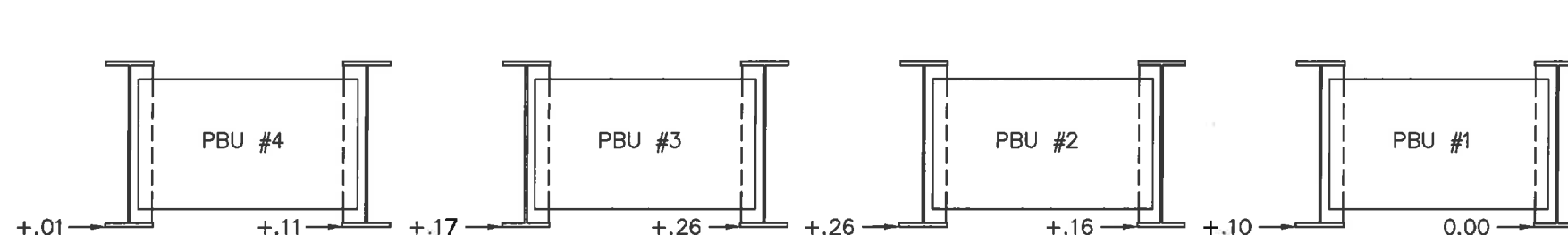
REVISIONS

PROJECT
WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

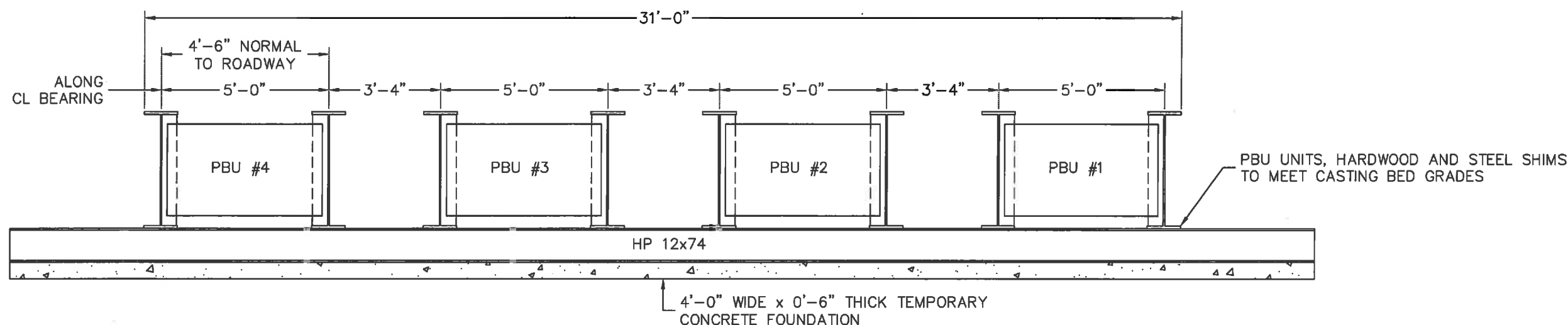
SHEET TITLE
QUALITY CONTROL
PROCEDURES/PLAN

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
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- CASTING SEQUENCE:
1. POUR 6" THICK BY 4' WIDE CONCRETE PAD AT ENDS ON COMPACTED SUBGRADE
 2. PLACE 12" H-PILE ON CONCRETE PAD
 3. SET INDIVIDUAL PLATE GIRDERS, SHIM TO GRADE.
 4. BOLT AND TORQUE INDIVIDUAL PBU SECTIONS
 5. PROFILE INDIVIDUAL GIRDERS
 6. TIE R-BAR, BUILD BULKHEADS PBU-UNITS 1-4
 7. SET SCREED, TEST RUN
 8. CAST PBU DECK SECTIONS 1-4 SIMULTANEOUSLY

BEARING ADJUSTMENT FOR CASTING BED
LOOKING BACKSTATION



LOOKING BACKSTATION

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PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
PBU-CASTING PLAN

DRAWN BY: KTW
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DATE: 04/28/14
SHEET NO:

Concrete class:	HPC A
Additional Description	
Ready Mix Supplier:	IRELAND CONCRETE - BURLINGTON, VT
Designed by	Nate Parry
Design strength	4000 PSI
Design by dry weight or saturated surface dry:	SSD

Agency Use Only	
Mix ID	HP00-A-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2014

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Notes:

Admixture dosages may vary on the basis of the ambient temperature, travel time, job site conditions and contractors preferred slump.

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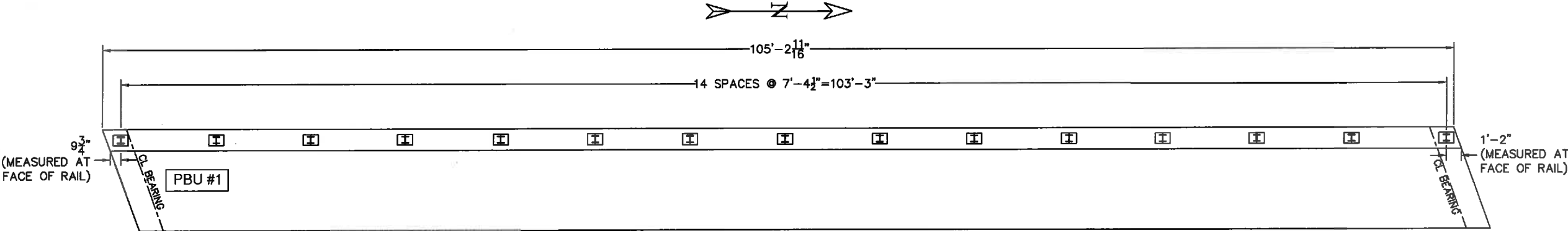
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ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



BRIDGE RAIL ANCHORAGE LAYOUT PLAN

PBU #1 SHOWN,

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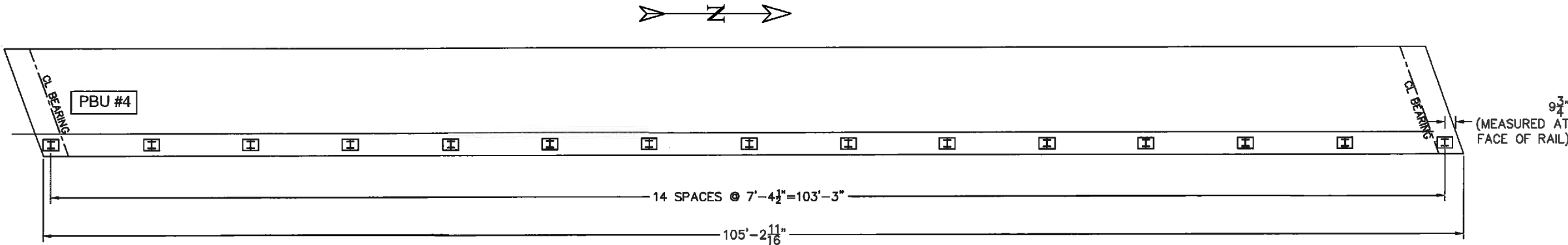
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BRIDGE RAIL ANCHORAGE LAYOUT PLAN

PBU#4 SHOWN,

